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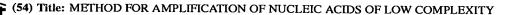
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(57) Abstract: The invention describes a method for amplifying nucleic acids, such as DNA with means of an enzymatic amplification step, such as a polymerase chain reaction, specified for template nucleic acids of low complexity, e.g. pre-treated DNA, like but not limited to DNA pre-treated with bisulfite is disclosed. The invention is based on the use of specific oligo-nucleotide primer molecules to solely amplify specific pieces of DNA. It is disclosed how to optimize the primer design for a PCR if the template DNA is of low complexity.